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Selected Speeches and News Releases

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U.S. Department of Agriculture • Office of Public Affairs

VOLUME OF RAIN, NOT INTENSITY, IMPORTANT IN PESTICIDE WASH OFF

WASHINGTON, July 5—It's not the intensity, but the volume of rain that counts when it comes to washing pesticides off plant leaves, according to U.S. Department of Agriculture studies.

The first 0.1 inch of rain removes almost all of the pesticide that is going to wash off, regardless of how long it takes for that 0.1 inch of rain to fall, reported Guye H. Willis, a soil scientist with USDA's Agricultural Research Service.

"It doesn't matter whether it takes a minute or an hour—a heavy storm or a sprinkle—it's the first tenth of an inch of rain that counts. It's the volume that is the significant factor when it comes to washing pesticides off leaves, rather than how hard the raindrops fall," said Willis, who is research leader at the ARS Soil and Water Research Laboratory in Baton Rouge, La.

"For farmers, this work confirms how much impact even a light rain could have on the effectiveness of their pesticide use," Willis said. Farmers generally try to avoid applying pesticides just before a rain.

He said the studies indicated that different categories of pesticides will wash off in different amounts.

Organochlorine pesticides such as lindane and endosulfan are the least likely to be washed off by rainfall, while carbamates (vernolate, diallate, etc.) and organophosphates such as malathion and parathion are the most susceptible, according to Willis.

For example, 0.1 inch of rain will wash off about 50 percent of an organophosphate pesticide that was on the plant when the rain begins, but only about 2 percent of an organochlorine. About 35 percent of the synthetic pyrethroid pesticides wash off. Organophosphates and synthetic pyrethroids are two of the major families of pesticides.

Willis said previous modeling of pesticides didn't consider which is the significant factor in pesticide wash off—the amount of rain, the size of raindrops or the energy with which the drops fall.

But now that studies have identified the amount of rain as the most important factor, he said, it will help researchers do more precise

laboratory and environmental chamber testing of pesticides for their likelihood of washing off and ending up in runoff.

Willis did the studies in cooperation with the ARS Sedimentation Laboratory in Oxford, Miss.

His results already have been used to modify several computer models that track environmental effects, including ARS's model for groundwater loading effects of agricultural management systems (GLEAMS).

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USDA ESTABLISHES SOYBEAN PROMOTION AND RESEARCH ORDER

WASHINGTON, July 5—The U.S. Department of Agriculture is establishing an "order," or set of implementing guidelines, effective July 9, for the promotion and research program authorized by the Soybean Promotion, Research and Consumer Information Act under the 1990 Farm Bill.

Daniel D. Haley, administrator of USDA's Agricultural Marketing Service, said the order authorizes a committee, the United Soybean Board, to administer the program.

The 63-member board of soybean producers will be nominated by the soybean industry and appointed by the secretary of agriculture. The procedure mirrors existing research and promotion programs for other agricultural commodities.

Haley said the order reflects comments USDA received in February and March on a proposal to establish the order.

A mandatory assessment of 1/2 of one percent of the market value of soybeans producers sell in the United States will fund the program. Assessments will begin Sept. 1.

First purchasers of soybeans will collect the assessments from producers, remitting them to "qualified" state soybean boards and to the national United Soybean Board. The national board certifies the state boards qualified to receive portions of assessments.

Haley said USDA will conduct within the next 18-36 months a referendum of producers to determine whether they wish to continue the

program. Prior to the announcement of the referendum's outcome, soybean producers may obtain full refunds of the assessments they paid to the program, he said.

Details of the order will appear as a final rule in the July 9 Federal Register. Copies and additional information are available from Ralph L. Tapp, Chief, Marketing Programs Branch, Livestock and Seed Division, AMS, USDA, rm. 2624-S, P.O. Box 96456, Washington, D.C. 20090-6456; tel. (202) 382-1115.

Clarence Steinberg (202) 447-6179

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USDA CHANGES PORK PURCHASE SPECIFICATIONS

WASHINGTON, July 5—The U.S. Department of Agriculture will revise the Institutional Meat Purchase Specifications (IMPS) for cured, smoked and cooked pork to reflect public interest in lower-fat pork and incorporate current processing technology.

Daniel D. Haley, administrator of USDA's Agricultural Marketing Service, said the revisions will add descriptive items such as "ham with natural juices," "ham with water added," and "ham with soy protein added," and would reduce external fat to 1/4 inch or less on all skinless cuts.

The revisions also add a section for precooked, portion-cut items, all of which have entered the institutional purchasing market since 1979, when the IMPS for this category, "Series 500," was last revised.

Haley said the revisions will expand the list of cured, cured and smoked, and fully cooked pork items in the IMPS from 36 to over 270.

IMPS includes three sets of specifications. The first, "General Requirements," provides guidelines for refrigeration and packaging. A second set is descriptions of fresh beef, lamb, veal and calf, pork; cooked and cured beef and pork; variety meats and sausage products.

The third IMPS set, "Quality Assurance Provisions," is a guide for using samples to determine a product's acceptability. The need for uniform definitions of quality prompted creation of the guide, Haley said.

The revisions will expand the Quality Assurance Provisions to include Series 500, furnishing institutional purchasers with means to specify the level of quality in the cured, smoked and cooked pork they buy. Items in Series 500 that will be measured in these provisions include proportion of

bone, cartilage, and fat to lean meat; completeness of curing or cooking and proper dimensions of a cut.

The expansion of the IMPS Series 500 reflects interest of organizations like the National Association of Meat Purveyors and other procurement and production segments of the pork industry.

The changes become effective Jan. 1, 1992. Copies of the document describing the changes may be obtained now by writing Michael L. May, Chief, Livestock and Meat Standardization Branch, USDA, AMS, Livestock and Seed Division, Rm 2603-S, P.O. Box 96456, Washington, D.C. 20090-6456.

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PMS-LIKE SYMPTOMS, MENSTRUAL PAIN RESPOND TO EXTRA CALCIUM

WASHINGTON, July 8—Taking in extra calcium may ease many of the psychological and physical discomforts some women experience before and during menstruation, according to new U.S. Department of Agriculture findings.

Women in a five-and-a-half-month controlled study reported “significantly fewer problems” with mood swings common to premenstrual syndrome (PMS). They also reported fewer problems with concentration and with behavioral changes when they got 1,300 milligrams of calcium per day instead of 600 mg. And they had fewer aches and pains during menstruation on the high calcium intake.

“Calcium had a strong effect on a number of symptoms women associate with the menstrual cycle,” said psychologist James G. Penland of USDA’s Agricultural Research Service in Grand Forks, N.D.

“We don’t know yet if 800 mg of calcium (the Recommended Dietary Allowance for women over age 24) will also reduce the symptoms,” Penland said. According to USDA food consumption data, the average calcium intake for U.S. women is a little more than 600 mg per day from food sources. Adding a cup of skim milk and 8 ounces of non-fat yogurt to the diet provides another 700 mg.

He said all 10 women selected for the study had typical menstrual cycles and none suffered from clinical PMS or prolonged bleeding. But

they reported fewer negative symptoms throughout their cycles when taking 1,300 mg of calcium.

Relief appeared greatest just before and during menstruation—when symptoms are most pronounced, said Penland.

When taking only 600 mg of calcium, he said, the women reported more mood swings characteristic of PMS throughout their cycles, particularly the week before menstruation. Symptoms ranged from irritability, anxiety and tension to loneliness, crying and depression.

Likewise, he said, undesirable behavioral changes, such as poorer work performance and overall efficiency, sleeping more and avoiding social activities, were most frequent during the low calcium intake. The women reported more of these symptoms just before and during menstruation.

But an increase in concentration problems—insomnia, forgetfulness, confusion and accidents—extended throughout their cycles due to the lower calcium intake, he added.

On the other hand, physical discomforts—muscle stiffness, headache, backache, cramps and general aches and pains—increased significantly for the lower calcium intake only during menstruation.

Penland said he also found a significant but less pronounced effect of calcium on water retention. The women reported less retention before and during menstruation while getting 1,300 mg.

Neither he nor the women knew what level of calcium they were getting, he noted, “yet they gave a very systematic set of responses on the standard Moos Menstrual Distress Questionnaire.”

For instance, they did not report positive feelings of well-being or affection. Neither did they have bursts of energy or orderliness some women experience during menstruation. Nor did they note any increase in dizziness, faintness, cold sweats and other such reactions of the involuntary nervous system.

Penland noted that the questionnaire also included a subtest of psychological and physical symptoms not associated with the menstrual cycle to see if this group of women had a tendency to complain. “They didn’t,” he said.

Moreover, he added, the results are very consistent with those of a similar study done at Metropolitan Hospital in New York. Women who were diagnosed as PMS sufferers reported fewer mood swings and less water retention and pain when they got an extra 1,000 mg of calcium daily.

It's unlikely that calcium is the only mineral affecting the mental and emotional status of women, according to Penland. He said results of nine other studies at the Grand Forks Human Nutrition Research Center suggest that copper, iron, zinc and aluminum levels also can affect women's moods. But the findings were often inconsistent and need further study.

In the calcium study, Penland said, manganese intake also seemed to affect changes associated with PMS. But the effect of calcium was far stronger.

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USDA TO CONDUCT REFERENDUM ON COTTON RESEARCH AND PROMOTION ORDER

WASHINGTON, July 8—U.S. cotton producers and importers will vote in a U.S. Department of Agriculture-monitored referendum July 17-26 on amendments to the Cotton Research and Promotion Order, the set of regulations implementing the 1966 Cotton Research and Promotion Act.

Daniel D. Haley, administrator of USDA's Agricultural Marketing Service, said the amendments provide for:

- importer representation on the Cotton Board;
- assessing imported cotton and cotton products, as is done with domestic cotton;
- increasing from \$200,000 to \$300,000 the amount the Cotton Board can reimburse the secretary of agriculture for expenses incurred in conducting a referendum;
- reimbursing government agencies which assist in collecting assessments on imported cotton and cotton products; and,
- terminating the right of producers to demand a refund of assessments.

The amendments originate in provisions of the 1990 Farm Bill, which also required that they be put to referendum.

Haley said the amendments would not become effective unless approved by a simple majority in this referendum.

USDA's Agricultural Stabilization and Conservation Service will assist in conducting the referendum, Haley said, by mailing ballots and voting instructions to all eligible cotton producers and importers of record by July 10. Eligible producers not receiving ballots before July 12 should

contact their local ASCS offices. Eligible importers not receiving ballots by then may obtain them from USDA, ASCS, Att: CGRD, P.O. Box 2415, Washington, D.C. 20013.

Importers should include a copy of Customs Form 7501, an entry summary of cotton containing products, with their requests for ballots.

Voters may hand-deliver ballots to ASCS polling places issuing the ballots, or mail them there, postmarked by midnight July 24. The secretary of agriculture will announce results of the referendum by Aug. 23.

Details of the referendum will appear in the July 9 Federal Register. Copies and additional information are available from Ronald H. Read, Cotton Division, AMS, USDA, rm. 2641-S, P.O. Box 96456, Washington, D.C. 20090-6456; tel. (202) 447-2259.

Clarence Steinberg (202) 447-6179

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A TRANSGENIC FISH FOR EVERY FRY PAN?

WASHINGTON—Last month, transgenic carp hatchlings, carrying the growth hormone gene from rainbow trout, took their first swim outside of an aquarium as part of the final phase in an experiment which may ultimately increase the production of faster growing, more nutritious fish.

Their new home is a research pond where scientists at Auburn University's Alabama Agricultural Experiment Station will study the growth and performance of the modified fish, comparing them to the nontransgenic carp they'll be living among.

Researchers are hoping to make carp grow more rapidly like their coldwater cohorts, the trout. Until now, these transgenic fish had only been studied indoors in aquariums.

The research is funded in part by the U.S. Department of Agriculture's Cooperative State Research Service. According to CSRS Administrator John Patrick Jordan, "This latest effort is an important step in developing fish that grow more rapidly. The experiment also represents a new frontier in applying the tools of biotechnology to aquatic species."

Using the carp experiment as a model, scientists might be able to manipulate the genetic codes of food fish, such as channel catfish. Genetic modification has the potential to control many of the problems that affect the commercial production of fish: diseases, parasites, feed

inefficiency, and the inability to tolerate different oxygen levels in water.

Not only could fish production be increased, but so could the production of more nutritious fish since growth hormones tend to promote leaner, higher protein growth.

Because consumer demand for catfish has increased steadily in the United States for the past 25 years, the ability to produce a uniform crop of catfish in less time could help ensure a readily available supply of fish. Producers, too, would share in the benefits of increased production.

“Although the potential benefits to consumers are great, right now we just want to develop the model by which all these potential changes can be produced. What we learn from these transgenic fish puts us one step closer to having that model,” said Dr. Rex Dunham, the Auburn University associate professor of fisheries and allied aquacultures who headed the research team.

Carp are being used as a research model, much as the tobacco plant, with its well-understood genetic makeup, is used by plant researchers to study techniques for improving disease or pest resistance in other agricultural crops.

“Putting the carp into an aquacultural environment is critical to learning what effect the extra gene will have on various production criteria such as growth rate and body composition,” Dunham said.

While in aquariums, the genetically altered fish grew 20 to 40 percent faster than the non-transgenic carp.

Testing in an outdoor pond setting is necessary to evaluate various environmental factors not present in an indoor aquarium. In indoor aquariums, transgenic fish show little production difference from nontransgenic common carp, other than increased growth rate. Characteristics such as survivability, percentage of deformation, color and shape were virtually the same.

Scientists also will be studying tolerance to low oxygen levels, susceptibility of the transgenic fish to disease and other questions of survivability.

The hatchlings, or fry, have been placed in 10 newly constructed ponds that were built with various safeguards, such as a state-of-the-art water filtration/drainage system, to prevent the fish from escaping or being removed. USDA also completed a full environmental assessment of the project and concluded the research presented no significant impact.

In addition to new ponds, Auburn built a fish hatchery/laboratory

complex where the fish are artificially bred and the progeny grown to sufficient size before being put in the new ponds.

“Placing the fish outdoors in contained ponds is the fourth step in a research project that began several years ago,” said Dunham. “The first step was to get the gene into the fish by injecting carp egg masses with the rainbow trout growth hormone gene.”

The second step was to determine if the extra gene was expressed in the genetic makeup of the carp. The research was done by Dunham’s collaborators at the University of Maryland using growth hormone assays.

The third step also used growth hormone assays to see if the extra gene would be passed along to progeny of the original transgenic carp.

If the transgenic carp prove to have the same increased rate of growth in the research ponds as they do in the indoor aquariums, and no other changes occur, the first model for developing transgenic fish will be completed.

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Issued: July 9, 1991

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USDA INCREASES FEE FOR MANDATORY INSPECTION OF TOBACCO

WASHINGTON, July 9—The U.S. Department of Agriculture will increase to 70 cents per hundred pounds the fee for mandatory inspection of domestic tobacco sold at USDA-designated auction markets, effective July 11.

Daniel D. Haley, administrator of USDA’s Agricultural Marketing Service, said the new fee would cover increases in salaries, benefits, travel and administrative costs.

“The current fee of 67 cents per hundred pounds has been in effect since July 1, 1989,” he said.

USDA conducts an annual review of the status of funds of the tobacco inspection program. The 1991 review was presented to the National Advisory Committee for Tobacco Inspection Services at its meeting on March 26. The committee recommended that the fee be increased to 70 cents.

The National Advisory Committee, established by the Omnibus Budget Reconciliation Act of 1981, is comprised of 14 representatives from

tobacco producer-interest groups who advise the secretary of agriculture on the fee for the mandatory inspection and certification of tobacco, the level of inspection services, and related matters.

USDA announced the proposed fee increase in the May 16 Federal Register, and received no comments.

Notice of the new fee will be published in the July 11 Federal Register. Copies are available from the Director, Tobacco Division, AMS, USDA, Rm. 502 Annex, P.O. Box 96456, Washington, D.C. 20090-6456; telephone (202) 447-2567.

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“EAU DE WEED” COULD SNARE A PESKY MOTH

WASHINGTON—Fragrances from weed flowers may give tomorrow’s gardeners and farmers a new, safe, powerful weapon for fighting a troublesome moth, U.S. Department of Agriculture scientists report.

Floral aromas from weeds could be mixed with an insecticide to lure and kill *Helicoverpa zea* moths before they produce their young, said chemist Roy Teranishi with USDA’s Agricultural Research Service.

The mix could be placed at several points in a field and “would never need to touch a ripening tomato or ear of corn,” he said.

Farmers and gardeners currently spray insecticide to kill the moth’s ravenous offspring, a caterpillar known variously as the tomato fruitworm, corn earworm or cotton bollworm. Each year, the pencil-thick, one-and-onefourth-inch-long pest costs farmers nationwide about \$1.5 billion in crop losses and other expenses such as insecticide, said Teranishi.

With gas chromatography and other techniques, he and colleagues identified about a dozen aromatic compounds from *Gaura drummondii* weeds in studies at the ARS Western Regional Research Center, Albany, Calif. Some of the compounds also occur in roses, cinnamon and wintergreen.

Scents from *G. drummondii* and other night-blooming weeds signal nectar, a “fast food” for young moths, Teranishi said in the latest issue of Agricultural Research magazine.

Newly emerged female moths seek nectar one night, then sex—and more nectar—the next. On the third night, mated females head for corn

and other crop plants to begin laying eggs, said ARS entomologist Peter D. Lingren. He is with the ARS Southern Crops Research Laboratory in College Station, Texas.

Each moth produces about 1,000 eggs. About half of the eggs, Lingren said, normally hatch and develop into caterpillars that "burrow into the corn ear, tomato fruit or cotton boll and feed on it." Once the caterpillars are inside, insecticides can't get at them, he said.

The scientists estimate that an insecticide-laced "eau de weed" is probably at least five years away. When tested and approved for gardens and fields, however, the product should reduce the amount of chemicals needed to protect crops, said Lingren. "Moths are typically around 10 to 100 times easier to kill with insecticides than caterpillars," he said.

Other ARS scientists in Texas are testing different combinations of floral essences to find out if chemicals isolated at Albany would tempt the moth. Last year, Lingren and colleagues collected more than 450,000 *Gaura* blooms for analyses by agency chemists in Albany and College Station.

By stalking moths at night, Lingren and ARS entomologist Jimmy R. Raulston at Weslaco, Texas, discovered that the insects favor nectar of *G. drummondii*, *G. longiflora* and *G. suffulta*. The weeds grow one to fifteen feet high and produce honeysuckle-like blossoms of pink, white or reddishpink.

"No one knows exactly what *G. drummondii* flowers smell like to a moth," said Teranishi. "But our noses perceive the fragrance as sweet, very floral and much stronger than the perfume of day-blooming weeds. Flowers that bloom only at night have to kick out a lot of aroma so that they'll have a better chance of being found and pollinated by night-flying moths."

The effectiveness of an aroma-insecticide mix might be boosted by adding a compound known to stimulate moth feeding, he said.

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Issued: July 9, 1991

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MADIGAN AND LUJAN APPOINT NATIONAL COMMISSION ON WILDFIRE DISASTERS

WASHINGTON, July 10—Secretary of Agriculture Edward Madigan and Secretary of the Interior Manuel Lujan Jr. today announced the appointment of 25 members to the National Commission on Wildfire Disasters.

The commission, composed of 13 members selected by Madigan and 12 selected by Lujan, will study the effects of wildfires on local and regional economies and natural resources, and make recommendations on helping regions and communities recover from losses due to wildfires. The commission was established under the provisions of the Wildfire Disaster Recovery Act (Public Law 101-286).

Commission members appointed by Secretary Madigan are: Mark Pawlicki, Sequoia Forest Industries, Dinuba, Calif.; Bruce Crapo, St. Anthony, Idaho; Jack Sanders, National Fire Protection Association, Quincy, Mass.; Neil Sampson, American Forestry Association, Washington, D.C.; James Brown, Oregon Department of Forestry, Salem, Ore.; Louis Jekel, Jekel & Howard, Scottsdale, Ariz.; Guy Fraker, Costigan & Wollrab, Bloomington, Ill.; Donna Lindquist, Pacific Gas & Electric, San Ramon, Calif.; William Banzhaf, Society of American Foresters, Bethesda, Md.; Duane Shroufe, Arizona Game & Fish Department, Phoenix, Ariz.; Ronald Myers, The Nature Conservancy, Tallahassee, Fla.; Lawrence Amicarella, Forest Service, Washington, D.C.; and Jean Hassell, Arizona State Land Department, Phoenix, Ariz.

Commission members appointed by Secretary Lujan are: Dr. John Walstad, Oregon State University, Corvallis, Ore.; Dr. David Olson, University of New Hampshire, N.H.; Jack Turnell, Mectetse, Wyo.; Bill Keil, writer/photographer, Portland, Ore.; Lisa Ann Price, environmental biologist, Anchorage, Ala.; Calvin Gale, consulting forester, Hermitage, Tenn.; Robert Thompson, Wyoming State Fire Advisory Board, Laramie, Wyo.; Dr. Sarah Bishop, Partners in Parks, Henderson, Nev.; Dr. Rod Norum, National Park Service, Boise, Idaho; Paul Vetterick, associate state director, BLM, Portland, Ore.; Sid Goodloe, Rosewell, N.M.; and John Cobb, state representative, Augusta, Mont.

The Wildfire Commission will study the effects of wildfires on: the current and future economy of affected communities; the availability of

timber supplies to meet future industry needs; fish and wildlife habitats; recreation in the affected areas; watershed and water quality protection plans in effect within National Forest System lands; ecosystems in the area; management plans of the affected National Forest System lands, national parks, and Bureau of Land Management public lands; wilderness; and biodiversity of the affected areas. The commission will submit a report with its findings and recommendations to the secretaries of agriculture and the interior by Dec. 1.

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